

**AMENDMENTS TO THE CLAIMS**

Please amend the claims as follows:

**Listing of Claims:**

Claim 1 (Currently Amended): A 3D image processing apparatus comprising:

    a storing unit configured to store data of a plurality of mask images corresponding to a plurality of projection directions associated with an object to be examined, and data of a plurality of contrast images corresponding to the plurality of projection directions associated with the object;

    a first subtracting unit configured to generate data of a plurality of subtraction images by subtracting the plurality of mask images from the plurality of contrast images;

    a reconstruction unit configured to reconstruct first volume data from the plurality of mask contrast images and configured to reconstruct reconstructs second volume data from the plurality of subtraction images;

a second subtracting unit configured to generate mask volume data by subtracting the second volume data from the first volume data;

    an image processing unit configured to generate data of a first 3D image representing a bone structure and/or a soft tissue structure from the first mask volume data, and configured to generate generates data of a second 3D image representing a contrasted blood vessel from the second volume data;

    an image synthesizing unit configured to generate data of a synthetic image by synthesizing the first 3D image with the second 3D image; and

    a displaying unit configured to display the synthetic image.

Claim 2 (Original): An apparatus according to claim 1, wherein the image synthesizing unit generates data of the synthetic image such that the second 3D image is displayed in a color different from that of the first 3D image.

Claim 3 (Original): An apparatus according to claim 1, wherein the image synthesizing unit assigns color information to the second 3D image independently of the first 3D image.

Claim 4 (Original): An apparatus according to claim 1, wherein the image processing unit generates the data of the first and second 3D images by volume rendering processing.

Claim 5 (Original): An apparatus according to claim 1, wherein the displaying unit singly displays the first 3D image or the second 3D image in place of the synthetic image in accordance with a user instruction.

Claim 6 (Currently Amended): A 3D image processing apparatus comprising:  
a storing unit configured to store data of a plurality of mask images corresponding to a plurality of projection directions associated with an object to be examined, and data of a plurality of contrast images corresponding to the plurality of projection directions associated with the object;

a calibration unit configured to calibrate the plurality of mask images and the plurality of contrast images by using vertically and horizontally arranged lines forming a lattice as a calibration image;

a reconstruction unit configured to reconstruct first volume data from the plurality of contrast images, and configured to reconstruct ~~reconstructs~~ second volume data from the plurality of mask images;

a subtracting unit configured to generate third volume data by subtracting the second volume data from the first volume data;

an image processing unit configured to generate data of a first 3D image representing a bone structure and/or a soft tissue structure from the second volume data, and configured to generate generates data of a second 3D image representing a contrasted blood vessel from the third volume data;

an image synthesizing unit configured to generate data of a synthetic image by synthesizing the first 3D image with the second 3D image; and

a displaying unit configured to display the synthetic image.

**Claim 7 (Original):** An apparatus according to claim 6, wherein the image synthesizing unit generates data of the synthetic image such that the second 3D image is displayed in a color different from that of the first 3D image.

**Claim 8 (Original):** An apparatus according to claim 6, wherein the image synthesizing unit assigns color information to the second 3D image independently of the first 3D image.

**Claim 9 (Original):** An apparatus according to claim 6, wherein the image processing unit generates the data of the first and second 3D images by volume rendering processing.

**Claim 10 (Original):** An apparatus according to claim 6, wherein the displaying unit singly displays the first 3D image or the second 3D image in place of the synthetic image in accordance with a user instruction.

Claim 11 (Currently Amended): A 3D image processing apparatus comprising:  
a storing unit configured to store data of a plurality of mask images corresponding to  
a plurality of projection directions associated with an object to be examined, and data of a  
plurality of contrast images corresponding to the plurality of projection directions associated  
with the object;

a first subtracting unit configured to generate data of a plurality of subtraction images  
by subtracting the plurality of mask images from the plurality of contrast images;

a reconstruction unit configured to reconstruct first volume data from the plurality of  
contrast images and configured to reconstruct ~~reconstructs~~ second volume data from the  
plurality of subtraction images;

a second subtracting unit configured to generate third volume data by subtracting the  
second volume data from the first volume data;

an image processing unit configured to generate data of a first 3D image representing  
a bone structure and/or a soft tissue structure from the third volume data, and configured to  
generate ~~generates~~ data of a second 3D image representing a contrasted blood vessel from the  
second volume data;

an image synthesizing unit configured to generate data of a synthetic image by  
synthesizing the first 3D image with the second 3D image; and

a control displaying unit configured to store the display ~~the~~ synthetic image in the  
storage unit.

Claim 12 (Currently Amended): An apparatus according to claim 11, wherein the  
image synthesizing unit generates data of the synthetic image such that the second 3D image  
is displayed by a display unit in a color different from that of the first 3D image.

Claim 13 (Original): An apparatus according to claim 11, wherein the image synthesizing unit assigns color information to the second 3D image independently of the first 3D image.

Claim 14 (Original): An apparatus according to claim 11, wherein the image processing unit generates the data of the first and second 3D images by volume rendering processing.

Claim 15 (Currently Amended): An apparatus according to claim 11, wherein the apparatus further comprises:

a display unit, the displaying unit singly displays configured to singly display the first 3D image or the second 3D image in place of the synthetic image in accordance with a user instruction.

Claim 16 (Currently Amended): A 3D image processing apparatus comprising:  
a storing unit configured to stores data of a plurality of mask images corresponding to a plurality of projection directions associated with an object to be examined, and data of a plurality of contrast images corresponding to the plurality of projection directions associated with the object;

a calibration unit configured to calibrate the plurality of mask images and the plurality of contrast images by using vertically and horizontally arranged lines forming a lattice as a calibration image;

a processing unit configured to generate first volume data representing structures of a bone and soft tissue and second volume data representing a structure of a contrasted blood

vessel on the basis of the data of the plurality of contrast images and the data of the plurality of mask images;

an image processing unit configured to generate data of a first 3D image representing a bone structure and/or a soft tissue structure from the first volume data, and configured to generate generates data of a second 3D image representing a contrasted blood vessel from the second volume data;

an image synthesizing unit configured to generate data of a synthetic image by synthesizing the first 3D image with the second 3D image; and  
a displaying unit configured to display the synthetic image.

Claim 17 (Original): An apparatus according to claim 16, wherein the image synthesizing unit generates data of the synthetic image such that the second 3D image is displayed in a color different from that of the first 3D image.

Claim 18 (Original): An apparatus according to claim 16, wherein the image synthesizing unit assigns color information to the second 3D image independently of the first 3D image.

Claim 19 (Original): An apparatus according to claim 16, wherein the image processing unit generates the data of the first and second 3D images by volume rendering processing.

Claim 20 (Original): An apparatus according to claim 16, wherein the displaying unit singly displays the first 3D image or the second 3D image in place of the synthetic image in accordance with a user instruction.